
$^{12}\text{C}(\gamma,\gamma)$ [1958Ra14,1985Aj01](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu		NP A968, 71 (2017)	1-Jan-2017

- 1958Ra14:** ^{12}C , measured the lifetime of the $^{12}\text{C}^*(4.43 \text{ MeV})$ level.
- 1967Ku11:** $^{12}\text{C}(\gamma,\gamma) E=10\text{-}15 \text{ MeV}$, measured nuclear resonance fluorescence. ^{12}C levels deduced level-width, B(M1).
- 1970Ah02:** $^{12}\text{C}(\gamma,\gamma) E=10\text{-}80 \text{ MeV}$, measured $\sigma(E_\gamma)$. ^{12}C deduced dipole oscillator strengths.
- 1971Fa14:** $^{12}\text{C}(\gamma,\gamma) E<6.75 \text{ MeV}$, measured resonance fluorescence. ^{12}C levels deduced level-width, $T_{1/2}$.
- 1976Me25:** $^{12}\text{C}(\gamma,\gamma) E=10\text{-}17 \text{ MeV}$, bremsstrahlung, measured σ . ^{12}C level deduced Γ_γ , γ -branching.
- 1976Ve06:** $^{12}\text{C}(\gamma,\gamma) E=14.6\text{-}15.22 \text{ MeV}$, measured $\sigma(E)$.
- 1977Be32:** $^{12}\text{C}(\gamma,\gamma) E=5.5\text{-}7.2 \text{ MeV}$, measured $\sigma(E)$.
- 1980Do04:** $^{12}\text{C}(\gamma,\gamma) E=23.5\text{-}39 \text{ MeV}$, measured σ . ^{12}C deduced E2 strength.
- 1980Is09:** $^{12}\text{C}(\gamma,\gamma),(\gamma,\gamma') E=15\text{-}30 \text{ MeV}$, measured $\sigma(\theta,E)$, $\sigma(\text{total},E)$. ^{12}C deduced resonances, J, π , T assignments.
- 1983Do05:** $^{12}\text{C}(\gamma,\gamma) E=23.5\text{-}39 \text{ MeV}$, measured $\sigma(E)$. $^{12}\text{C}(\gamma,\gamma') E=23.5 \text{ MeV}$, measured $\sigma(\theta)$. ^{12}C deduced EWSR isoscalar, isovector E2 strength, $\Gamma_{\gamma 1}/\Gamma_{\gamma 0}$, photonuclear absorption σ .
- 1984Ha08:** $^{12}\text{C}(\gamma,\gamma) E=150\text{-}400 \text{ MeV}$, measured $\sigma(E,\theta=115^\circ)$.
- 1990Sc02:** $^{12}\text{C}(\gamma,\gamma),(\gamma,\gamma') E=15\text{-}140 \text{ MeV}$, measured $\sigma(E,\theta)$. ^{12}C deduced E1, E2 resonance parameters, radius parameters, polarizability of bound nucleons.
- 1992Lu01:** $^{12}\text{C}(\gamma,\gamma) E=61,77 \text{ MeV}$, measured $\sigma(\theta)$, Compton scattering. Deduced bound nucleon electromagnetic polarizabilities.
- 1993Ah01:** $^{12}\text{C}(\gamma,\gamma) E\approx 200\text{-}500 \text{ MeV}$, compiled, reviewed $\sigma(\theta)$ vs E data.
- 1994Wi13:** $^{12}\text{C}(\gamma,\gamma),(\gamma,\gamma') E=200\text{-}500 \text{ MeV}$, measured $\sigma(\theta)$ vs E.
- 1995Ha23:** $^{12}\text{C}(\gamma,\gamma) E=58,75 \text{ MeV}$, measured $\sigma(\theta)$. Deduced bound nucleon electromagnetic polarizabilities.
- 1995Ig01:** $^{12}\text{C}(\gamma,\gamma),(\gamma,\gamma') E=158.8\text{-}290.2 \text{ MeV}$ bremsstrahlung, measured $\sigma(\theta)$,
- 2001Wa24:** $^{12}\text{C}(\gamma,\gamma),(\gamma,\gamma') E=84\text{-}105 \text{ MeV}$, measured E_γ , I_γ , $\sigma(\theta)$. Deduced approximate bound nucleon polarizabilities.

^{12}C Levels

E(level) [†]	$T_{1/2}$	Comments
4439.4 16	45 fs 12	$T_{1/2}$: From (1958Ra14).
9.6×10^3 2		
11.8×10^3 2		
12.7×10^3		
13.3×10^3 2		
15.11×10^3		Γ : See Table 12.15 in (1968Aj02).
16.11×10^3		
17.2×10^3 2		
18.3×10^3 2		
20.5×10^3 2		
26.5×10^3 4		
29.5×10^3 3		

[†] From references in ([1980Aj01](#),[1985Aj01](#)).